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Centro Nacional de Supercomputación



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EARTH SCIENCE DEPARTMENT

Agencia Catalana de l'Aigua (ACA)

Arnau Cangròs, tècnic en gestió de recursos hídrics

Services – Earth Science Department



- Created in 2005; 350 employees
- Research, develop and manage information technology
- Facilitate scientific progress and its application in society

Earth Science Department










- **Atmospheric composition modelling**
- **Climate prediction modelling**
- **Computational Earth Sciences**
- **Earth Sciences Services**



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Computational Earth Sciences

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Omar Bellprat 
 Louis-Philippe Caron
Eleftheria Exarchou 
 Neven Fuckar
François Massonnet 
 Martin Ménégoz
Chloé Prodhomme 
 Danila Volpi

Climate Prediction

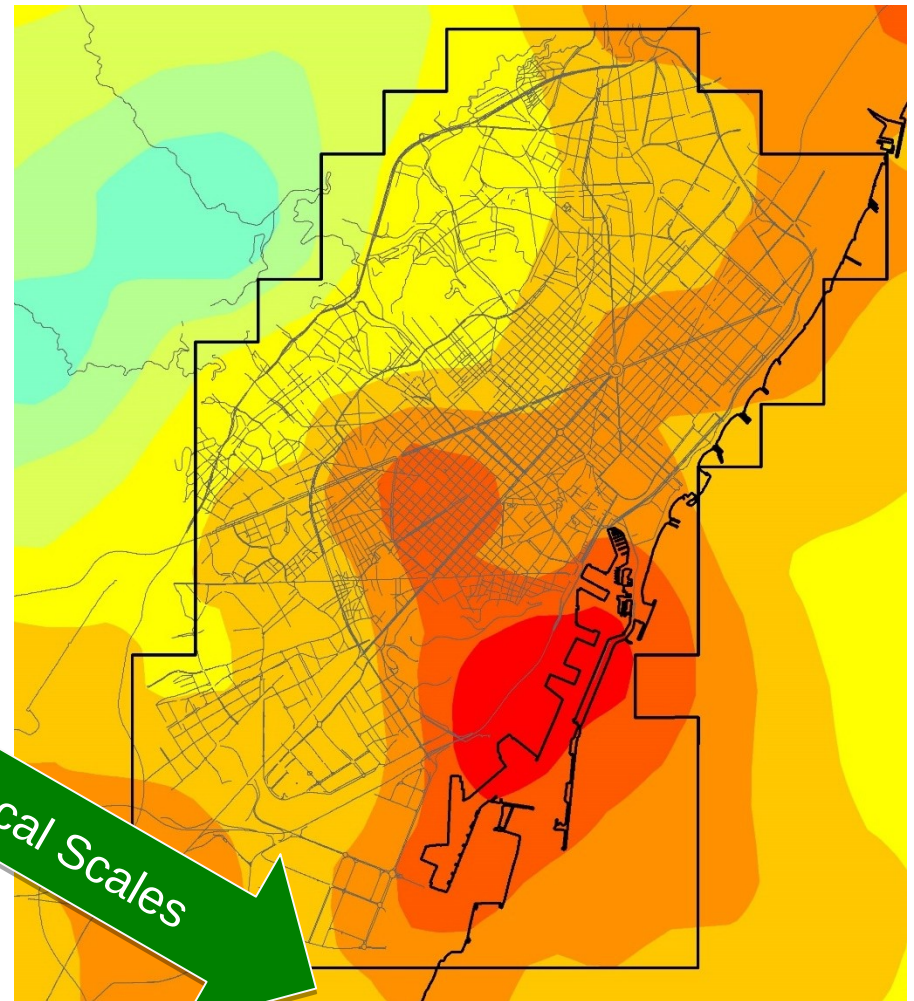
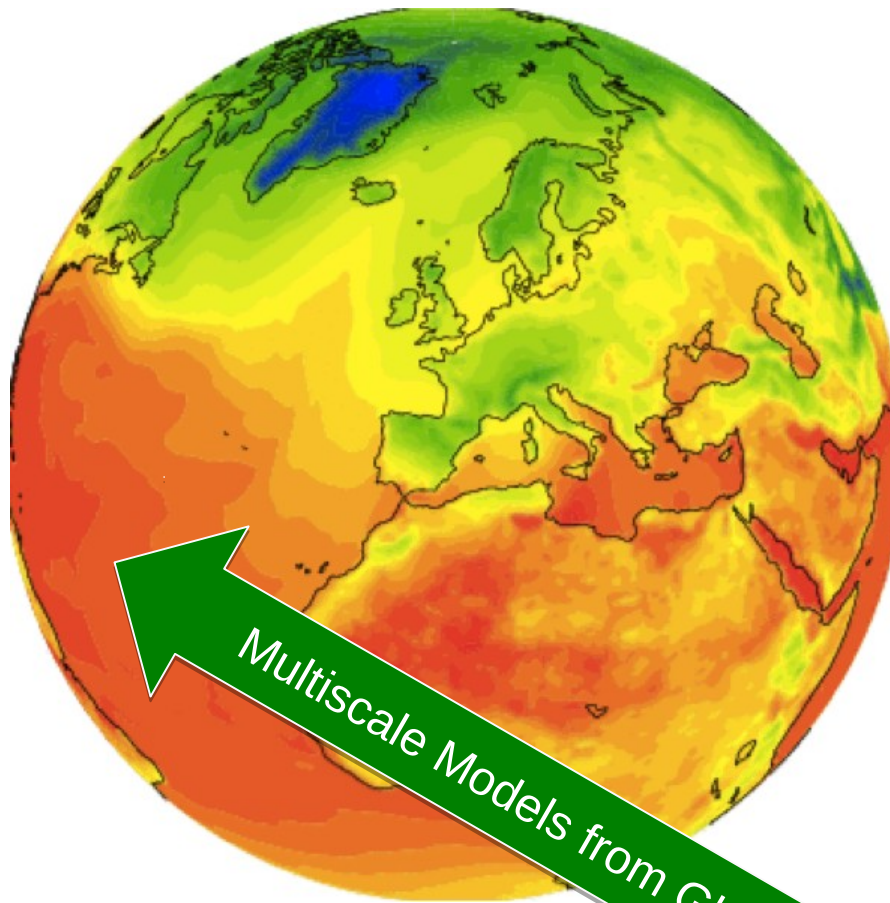
Earth System Services

 Gustavo Arévalo
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Maria Goncalves 
 Marc Guevara
Vicenzo Obiso 
 Michele Spada
Maria Teresa Pay 
 Victor Valverde 
 Lluís Vendrell 

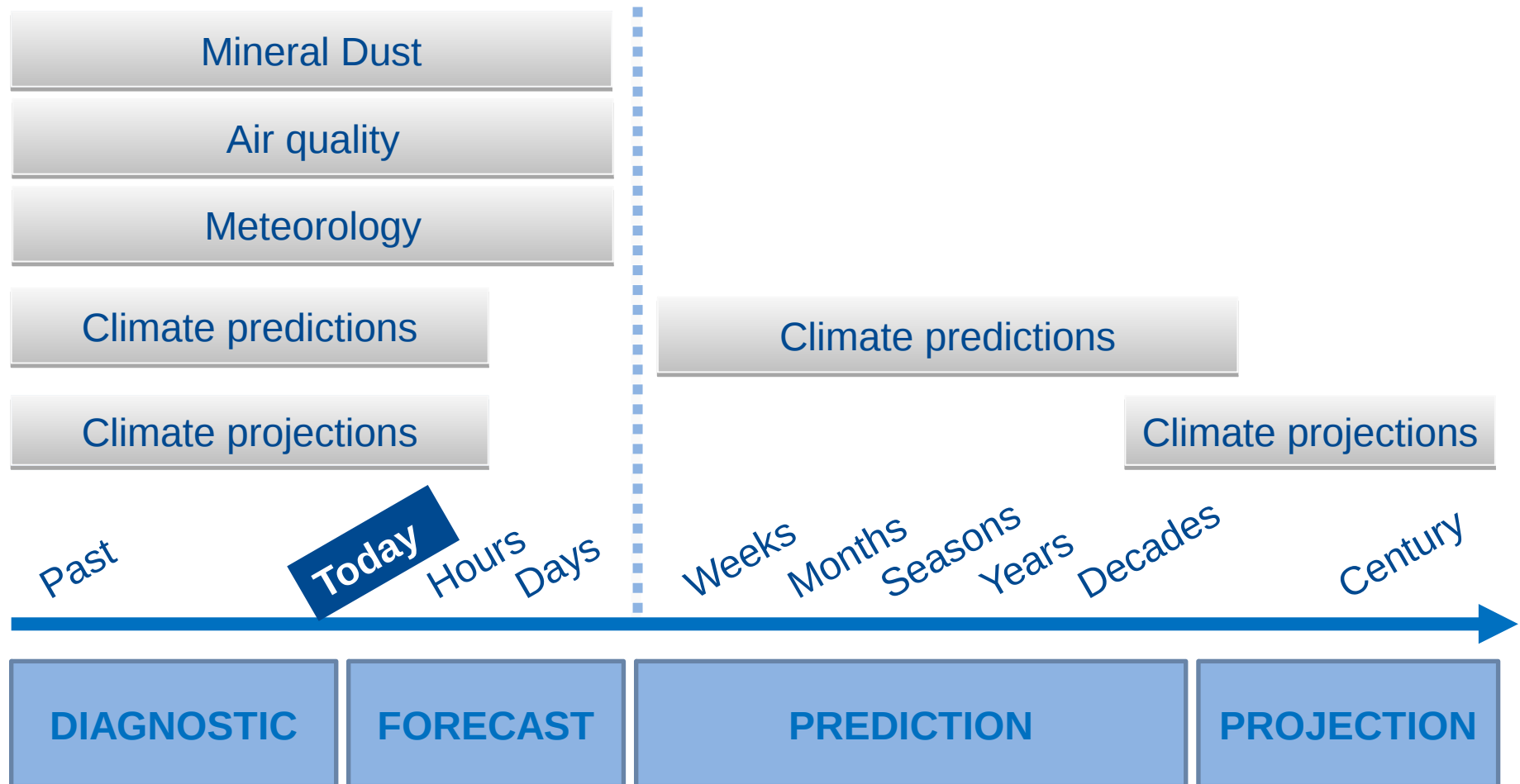
Atmospheric Composition

Multi-scale models from global to local scales



Multiscale Models from Global to Local Scales

Temporal scales





Earth System Services

National and International collaborations



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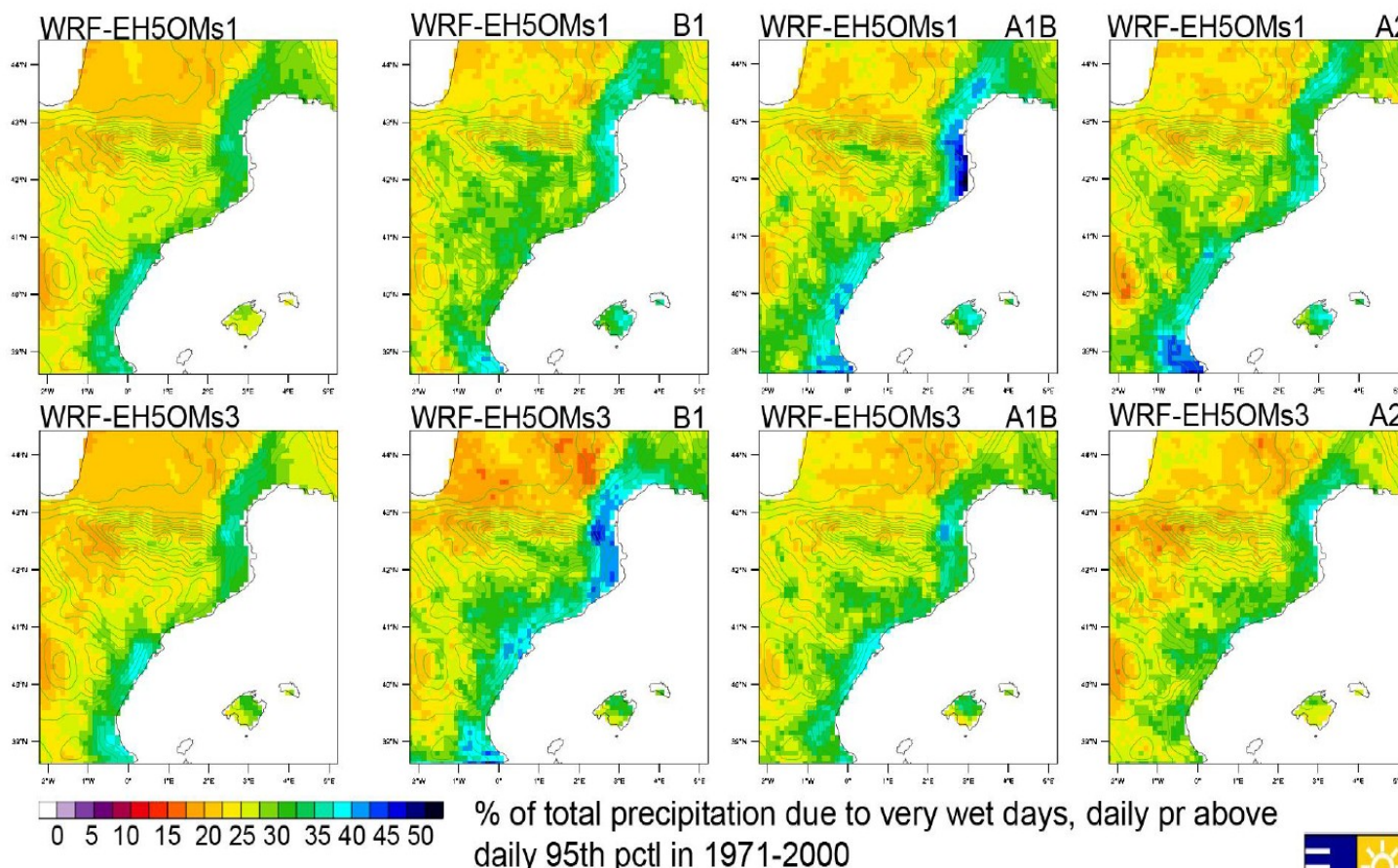


Generalitat de Catalunya



Dynamical downscaling of climatic temperature and precipitation trends

This work aims to provide an assessment of temperature and precipitation projections for mid-21st century in the North Western Mediterranean Basin (NWMB) at high resolution.



Planning of vineyards fields



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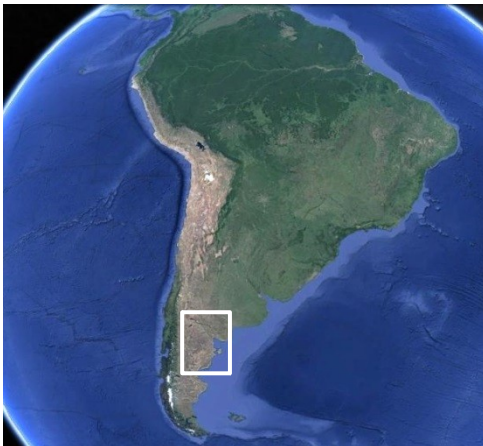
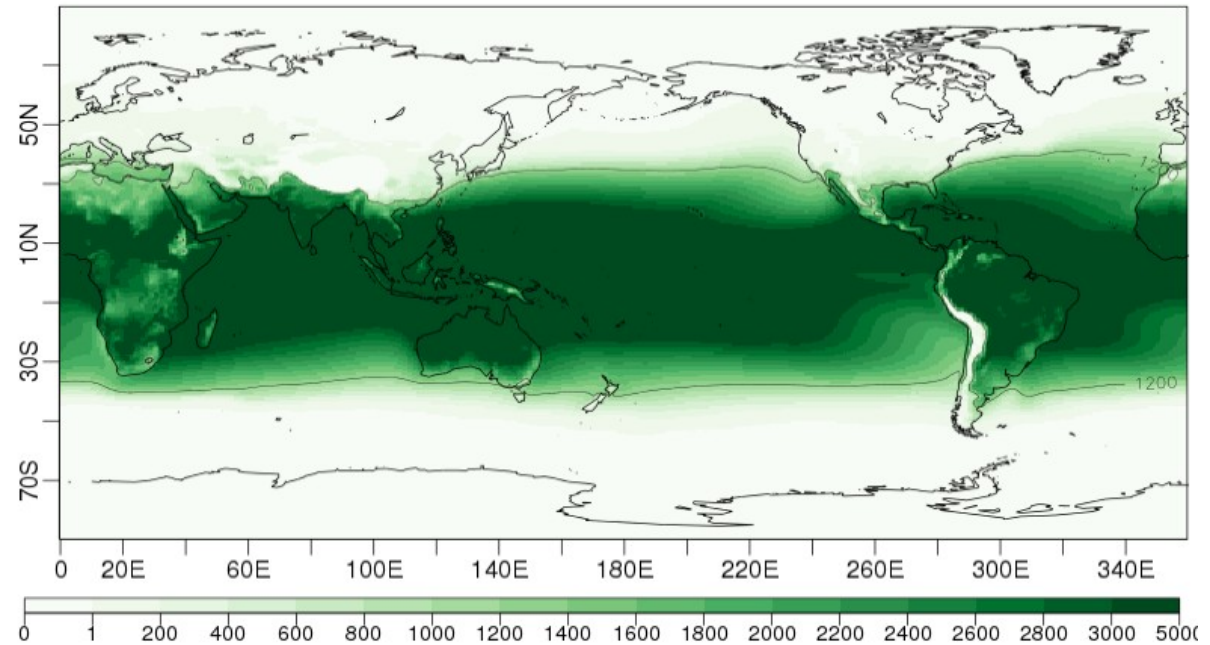
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TORRES



1870

Winkler Index: Oct-Abr

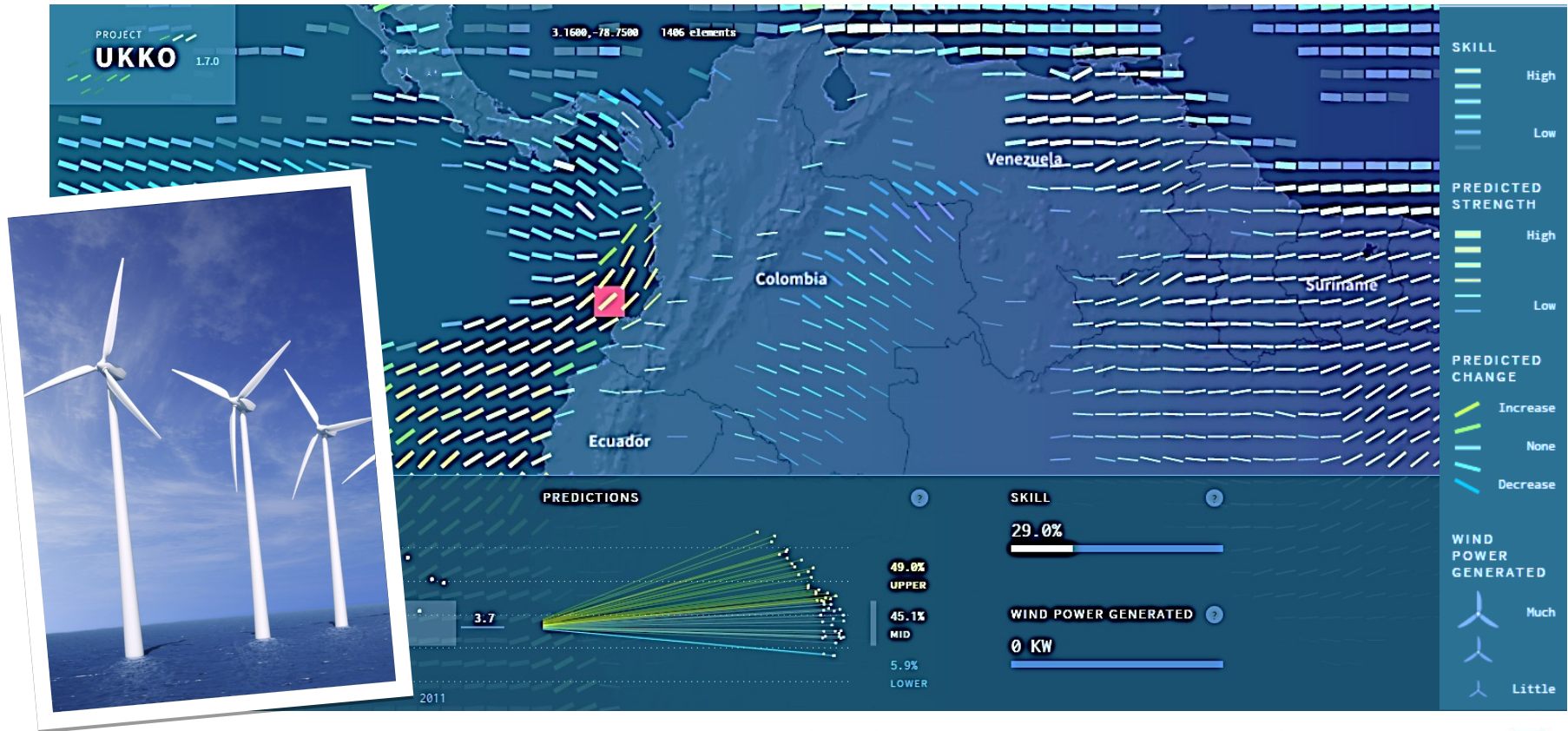


Seasonal wind power predictions



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RESILIENCE
PROTOTYPE



EUPORIAS




ALSTOM



EnBW

Potential applications in FLOOD RISK - WATER SUPPLY

- **Sub-seasonal** predictions (one month ahead)
 - **Seasonal** predictions (the season ahead)
 - General trends for precipitation, Temperature, etc.
 - **Downscaling** of climate variables.
- 
- A large, solid blue arrow pointing downwards, indicating a flow or relationship between the top and bottom lists of applications.
- Informing Hydroelectric power management
 - Early warning systems for extreme events
 - Information on drought periods or flood risk

- **IMPRESX (Horizon 2020).** (Improving predictions and management of hydrological extremes)
 - Updates on research advances
 - Feedback
 - Participation in user workshops
- **New projects** as partners or stakeholders
 - New program H2020 2016-2017
 - ITN CODA



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Thank you!

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